| Compound | R ¹ | R² | R³ |
|-----------|-----------------|-----------------|-----------------|
| Alpha (α) | CH₃ | CH ₃ | CH ₃ |
| Beta (β) | CH ₃ | Н | CH ₃ |
| Gamma (γ) | Н | CH ₃ | CH ₃ |
| Delta (δ) | Н | Н | CH ₃ |

Fig. 1

$$R^3$$
 R^4
 R^5
 R^5
 R^5
 R^6
where $X = O$, N , or S

B 1 = alkyl, alkenyl, akynyl, aryl, and heteroaryl,

B 1 = alkyl, alkenyl, akynyl, aryl, and heteroaryl carboxylic acids or carboxylates.

B 1 = alkyl, alkenyl, akynyl, aryl, and heteroaryl carboxamides and esters.

B1 = alkyl, alkenyl, akynyl, aryl, and heteroaryl thioamides, thioesters and thioacids

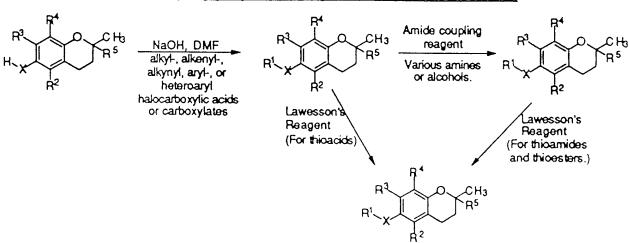
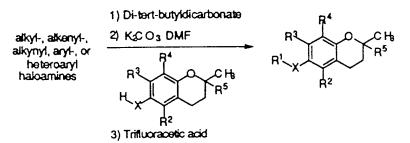


Fig. 2A

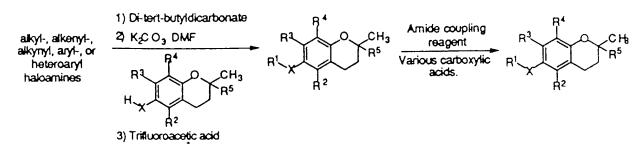
R1 - alkyl, alkenyl, akynyl, aryl, and heteroaryl thiolesters.

R1 = saccharides or alkyloxy-linked saccharides.

R1 = alkyl, alkenyl, akynyl, aryl, and heteroaryl amines.



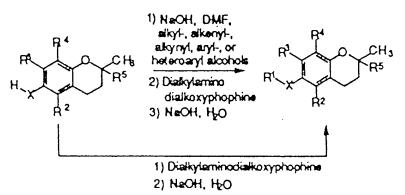
B 1 = alkyl, alkenyl, akynyl, anyl, and heteroaryl carboxamides.



B1 - allot alkenyl alynyl and and heteroard sulfonstes.

B1 - alkyl alkenyl akynyl and and betamany sull stes.

B1 = alkyl, alkenyl, akynyl, and, and heteroaryl phosphates.



B1 - slkyl alkenyl akynyl and heternanyl alcohols, ethers, and nitriles.

Fig. 2C

R² = benzyl carboxamides or esters.

 R^2 = amine

Fig. 3

B³. B⁴ - benzyl carboxylic acid or carboxylate.

R³, R⁴ = benzyl carboxamides or esters.

B^3 , B^4 = saccharides

$$B^3$$
, B^4 = amine

Fig. 4

R⁵ = alkyl, alkenyl, akynyl, aryl, and heteroaryl.

R⁵ = alkyl, alkenyl, akynyl, and heteroaryl amides and esters.

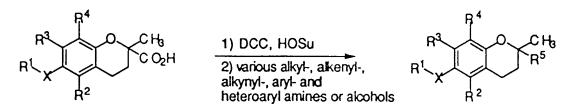
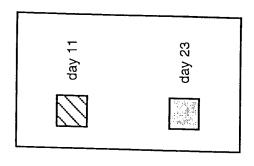


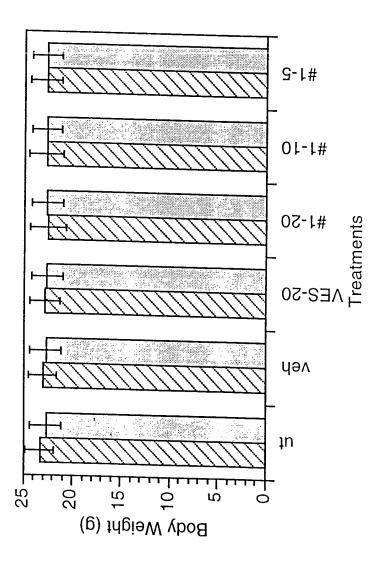
Fig. 6A

4 2 (90%)

$$\begin{array}{c} O_{2} \\ O_{3} \\ O_{10} \\ O_{10} \\ O_{2} \\ O_{3} \\ O_{2} \\ O_{2} \\ O_{3} \\ O_{4} \\ O_{5} \\ O_{5}$$

Fig. 6B





ig. 7

